the medical degree and the usual hospital internship, special surgical training in the wards and operating room for a period of at least three years under the direction of a master surgeon, should be the minimum requirement for such a course. In order that proper credit should be given for this course, the degree of Bachelor of Medicine should be given to the under-graduate and after the hospital internship and a three year's special surgical course, the degree of Doctor of Medicine be conferred. A graduate thus specially trained should, after examination by a Federal official board of surgeons, be licensed to practice surgery in any commonwealth of the Republic without further examination. He should be thenceforth known as a surgeon and eventually be in line for fellowship in the American College of Surgeons. By this orderly, simple and scientific course, the young surgeon would have an instant orientation and standing. There could never be any question of the justification of his claim in announcing himself a surgeon, young though he might be and lacking in the maturer judgment which comes with a longer experience. It would be the natural ambition of this young surgeon to enlarge and embellish his training by teaching, and by travel, as privilege and opportunity permitted.

With such a course laid down as the curriculum for every student in surgery, the present chaotic state of the practice of surgery in America would not only be simplified, but the stamp of system, thoroughness and character would be given to the work.

Finally, to the time-worn criticism that a long course in medical training is too expensive for the average student, we may venture the reply that all education has steadily grown more expensive. A way will always be found by or for the student of brains and quality, no matter how long and difficult the course. And what medicine needs today is quality; the very finest type of intellect is none too good for the surgical demands of the period. We shall have done for humanity and for our guild the greatest possible service if we shall have maintained, with unfailing courage, the scholarship and training of the student on the highest intellectual plane.

MAGNET EXTRACTION OF FOREIGN BODIES WITH PARTICULAR REFERENCE TO THE IMPORTANCE OF ACCURATE LOCALIZATION.*

By HANS BARKAN, M. D., San Francisco.

The removal of foreign bodies from the eye by some magnetic implement is not a modern manoeuvre, but was practiced in isolated cases and in very rough form in the middle ages. The accurate methods of removal and localization are, however, of fairly recent origin. Dixon of London in 1859 is first on record as having drawn from the posterior chamber through a scleral incision a part of a blade of scissors. In 1874 McKeown of Belfast, also through a scleral incision, removed a foreign body with a specially constructed magnet.

The names of Snell, Sulzer, Schlosser, Hirschberg and Haab follow each other in rapid succession, each improving on some form of magnet until 1892 when the last named constructed his famous giant magnet which, with slight modifications, is still the most powerful magnet of them all.

The original method of removal, that of scleral incision for bodies posterior to the iris plane, was in consequence of Haab's magnet and its immense power, not very much used up to fairly recent years when it has again met with the approval of a number of eminent operators, and has been resorted to in most cases by them.

This paper will deal in the main with bodies capable of removal by some form of magnet, and chiefly with bodies posterior to the iris plane.

Every foreign body case is a law unto itself, but for purposes of discussion one can divide the cases rather didactically into a certain number of fairly well marked clinical groups: *1st*—cases seen early, 1 to 3 hours after injury with no visible infection; *2nd*—middle stage cases, 2 to 3 days after injury which again consist of two groups,—the eye not infected and the eye infected; and *3rd*—late cases, weeks or months after injury, again divisible into two groups,—the eye not infected, and the eye changed in its anatomy as the result of infection at the time of injury.

Without, for the moment, taking up the location of the foreign body, its size, its shape, the character of the wound, or the amount of vision remaining, we can discuss the clinical picture of certain early, middle and late stages. Cases seen very early, 1 to 3 hours, no signs of infection as yet, demand immediate removal. It is the practice of some men in these cases, to extract the foreign body through the anterior route by means of the most powerful magnet obtainable without waiting for localizing pictures on the theory that the sooner removed the less danger of infection to follow. This, while it has some points in its favor, in general, I think, is to be condemned. I do not believe that it at all influences the question of infection. If the piece has carried in bacteria, infection will take place no matter whether the piece be removed an hour after its entry or a number of hours afterward. Removing a piece of unknown size and uncertain location by main force exerted at the anterior pole of the eye does, in many cases, cause traumatic consequences which could well be avoided if a few extra hours were taken to accurately localize the piece and estimate its size and shape.

The middle stage cases,—2 to 3 days after injury, depend upon their immediate treatment as to whether infection has taken place or no. If an acute purulent infection exists, immediate primary removal of the eye is indicated. If no infection exists, none will take place and time can well be taken for accurate localization. If a subacute infection, mild iritis and cyclitis be present but no frank purulent process, the foreign body removal is indicated as soon as possible after localization. I have seen a number of such eyes, the subacute process dying down and

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disappearing within 3 days after removal of the foreign body.

The late stage cases,—weeks or months after injury,—repay a careful study. In these especially, the localization of the foreign body and the character of it, are of importance. If the eye is quiet, giving no trouble, with the foreign body buried in the lens or, perhaps, deep in the posterior pole, possibly in the sclera, the foreign body, although casting a dense shadow, possibly very weakly magnetic as it may well be if iron ore, iron pyrites or iron silicide, it may be wise to leave it alone with due warning to the patient as to possible future complications, of course. If the eye in the late stage shows any evidence of shrinking, of cyclitis, slight ciliary tenderness and descemetitis, do not attempt removal, but enucleate. It does not pay to be sentimental about the preservation of an eye in this condition.

Let us turn to the question of accurate localization in any and all of these groups. What do we gain by it? In the first place it depends upon whether we are operators by the anterior route in every case (as is practically the case with Haab and his pupils), or whether we are operators by the anterior or posterior route depending upon circumstances, or whether we choose the posterior route on all possible occasions. In the first case localization, size and shape are of relatively little importance; in the last two cases they are of great importance. If we are to choose between anterior or posterior extraction we must know as the main decisive factor the size and shape of the piece, even more so than the accurate localization, except in so far as we naturally, must know whether the piece is in or out of the eye. A fairly large sized piece of smooth edges and of form approximating a square or circle will be easier to remove through the anterior route or through its wound of entrance than a long pointed or sharp edged sliver. A very small piece, no matter what its shape, may be more difficult, especially if located far back, to remove by the anterior route because of the well-known fact that the traction of the magnet varies inversely as the square of the distance; and broadly speaking, the larger the piece and the nearer it is to the magnet pole, the more certainly it approaches an easy extraction.

To the operator choosing by preference the posterior route, localization is, in the main, of importance in regard to whether or no the piece is to the temporal or nasal side of the mid-line, and whether it is superior or inferior to the horizontal plane. Its localization in regard to these facts decides the location of his incision. The size and shape of the piece are practically of little importance to him as his incision through the sclera should always be made a fairly liberal one, even with a small piece.

The damage caused by the entrance of the foreign body is another factor in considering the method of extraction. If the anterior structures be somewhat mutilated drawing the piece out through the same track will not cause much more damage; it is the simplest and quickest, and may be preferred. If the anterior structures have been little injured and the piece be located posterior to the iris plane (which we are assuming in this paper) removal by scleral incision thereby obviating any danger of wounding the anterior structures is, to my mind, preferable.

The location in reference to certain anatomical subdivisions is also of interest and of particular importance. In this respect there are three main points: *First*—the piece is buried in the lens causing a partial or total traumatic cataract. The question of removal of such a piece has come up personally five times in the last year. Four of these cases were in young men; they were total cataracts with the rest of the eye in splendid condition. I advised removal of the cataract and foreign body although knowing that the piece in this location was of no danger to the eye. the main reason being the cosmetic improvement. These boys are looking for better positions as they get older and meet a tremendous handicap in their advance because of the white pupil which, to the employer, is a striking sign of one-sided visual defect. The extraction in these cases is extremely easy. There is practically no nucleus and with dilated pupil and the magnet in position over the operated wound, a clear, black, round pupil was obtained in all four cases. In the fifth case, a man of sixty, I did not operate. The man had held the same job for years (that of top-fitter in an automobile factory), a job he was well able to fill with monocular vision. He had some competence, so that even should he lose his position, he was not dependent and he had no higher position to look forward to.

I believe that in these cases especial consideration of the economic factors should play quite a decisive role.

The next anatomical point of interest is in cases of bodies buried behind the ciliary body. These should not be removed through the wound of entrance or through an incision made for purposes of removal through the anterior chamber. They are removed with much less trauma and reaction by the posterior route.

Finally, a very interesting class, bodies buried so far back that it is a question as to whether they are in or out of the eyeball. Of these cases I have had three interesting experiences all pointing to the same lesson, namely, that the fact that the piece moves with the movements of the eyeball does not absolutely mean that it is in the eye or even in the sclera. In two of these three cases pictures taken on the same plate with the eye moved from a straight position to an elevated one showed distinct alteration of position of the foreign body on the plate. In both these cases I attempted to remove the foreign body through a scleral incision and had the pole of the Hirschberg magnet in the vitreous not more than a few millimeters from the piece which in both cases was a large one and must have been magnetic from the history. In neither case was the piece attracted and both cases a year after the operative interference still had non-

irritated fairly useful eyes. These pieces, though they move with the movements of the eye, may be lying on the posterior aspect of the sclera or even slightly further back as the retro-orbital tissues two or three millimeters back of the eye have a certain amount of movement with the movement of the eyeball.

The usual scleral incision is made parallel to the inferior or superior border of the lateral rectus muscle with some form of conjuctival pocket or flap. I have in a number of cases pursued the following method which, except for one case where for some reason I was handicapped by excessive hemorrhage, has proved to be very satisfactory. Depending upon whether the body lies temporal or nasal to the mid-line, I expose the inferior edge of the internal or external rectus muscle by one or two deep cuts through the conjunctival and subconjunctival tissue with a scissors. A smooth non-magnetic hook is introduced around and under the inferior edge of the muscle and the muscle pulled upward exposing the sclera beneath the former situation of the muscle. A double arm suture is passed through the anterior portion of the conjunctival incision above and below, another one through the posterior portion. A knife incision fairly liberal in size for small pieces even (not less than 3 millimeters), is made directly into the exposed sclera in a direction parallel with the rectus muscle and underneath its former situation. The pole of the magnet is approached to this incision until it just touches. Should the foreign body not appear, the Hirschberg hand magnet is introduced very gently pointing in the direction of the piece and it is removed by this means. Immediately the assistant lets go of the hook and the rectus muscle slides downward covering the scleral incision completely. The two sutures are now tied, thereby again approximating the lips of the original conjunctival incision. I find this method an easy one to do successfully and without immediate complications in the great percentage of cases. The question as to whether retinal detachment is apt to occur is a very debatable one. Immediately, it certainly does not. Whether in time a certain percentage occur is hard to state. That some should occur is certain, but even then I do not believe that we cause more eventual visual disability than would be caused by the anterior extraction of large and sometimes jagged pieces.

In conclusion, we all realize that no subdivision or analytical table of foreign body cases and their treatment is of great value. Each case, as stated before, must be and is a law unto itself. But in a broad way, the clinical subdivisions as I have suggested them, may serve to lead men not frequently asked to perform magnetic extractions into a correct clinical point of view. The object of the paper will be fulfilled if it arouses among the ophthalmologists present a discussion and if it gives the non-ophthalmological readers of the Journal who may be called upon under certain conditions to perform foreign body removal, some basis for clinical judgment.

RETROVERSIONS OF THE UTERUS.*

By FRANK W. LYNCH, M. D., San Francisco.

The older teaching of Schultze that retroversions and retroflexions of the uterus were abnormal positions that invariably caused symptoms has been succeeded by the opposing view of Theilhaber. Nearly all agree at present that a uterus may be in any position, provided that it is movable, and that symptoms will not occur unless the organ is diseased or is associated with tubal or ovarian pathology.

Yet large retroposed uteri are so often the seat of metritic or vascular changes, and are so frequently accompanied by ovarian disturbances that the patient usually presents the complex symptomatology at one time ascribed to the uterine position. Such cases generally follow birth trauma. Occasionally women who have never been pregnant develop slowly a train of similar symptoms. The uterus gradually enlarges during a period of some years and the ovaries become swollen, cystic and tender. The symptoms disappear almost invariably after the uterus is suspended by a well chosen operation.

Largely because of misunderstanding Theilhaber's views, some men doing obstetrics follow their cases only for a few weeks after delivery. Others will not replace even a markedly retroverted uterus after childbirth on the ground that any position save actual prolapse is normal. The experience of most gynecologists indicates the contrary, at least to the extent that markedly retroverted uteri sooner or later undergo metritic changes. The majority believe that many symptoms can be avoided if the uterus is kept in the forward position.

I have long been of the personal belief that a woman's care during the year following delivery may be even more important than that during her pregnancy. Consequently we have undertaken a study of posterior displacements following childbirth, hoping to obtain a number of basic facts.

The material for our study has been obtained from the follow-up records of the Woman's Clinic of the University of California Hospital. We have made every effort to secure a complete series, yet it has not proven possible. We are following 95% of our operative material, but have not yet been able to convince women after childbirth that their subsequent condition may be a matter for their concern. The following observations are based on the pelvic findings and symptoms of 63% (761 cases) of 1225 women delivered in our clinic during the investigation. The findings have been well controlled for one year to four months following delivery.

We have arranged our data to show:

(1) The frequency of retrodisplacements after discharge from the Maternity.

(2) The comparative frequency of vaginal relaxations forceps, and parity in both the retroposed and non-retroposed cases.

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